

scarlet larkspur, varying in height from three to six feet or more. The plants were evidently completely at home in this dry sunny location, sheltered from the stiff cool coast breezes so prevalent in the valley, for there were many magnificent specimens. Interspersed among the plants bearing the typical cardinal colored flowers were a conspicuous number with flowers of paler hue, ranging through several shades of orange-red, orange-yellow, and buff to a clear lemon-yellow with only a trace of cardinal in the spurs. The color-variant forms were of course in the minority, no doubt less than ten percent of the total number of plants, while the pure yellows, though noticeable, were very few. No other consistent differences, such as height, habit, or leaf variations, could be distinguished in the plants.

Similar color variations have been recorded in *Delphinium nudicaule* Torr. & Gray, a closely allied Californian species. In "Delphinium," the book of the American Delphinium Society for 1936, Mr. Carl Purdy (p. 37) mentions such color variations, and Major N. F. Vanderbilt (p. 65) states that he has "described various forms and variations in *D. nudicaule* in a wide range." Neither author indicates whether or not the variations were found in wild plants or in those resulting from garden manipulation.

Division of Genetics, University of California,
Berkeley, October 25, 1937.

GLAUCOCARPUM, A NEW GENUS IN THE CRUCIFERAE

REED C. ROLLINS

The discovery, through recent exploration, of a new genus of plants in the continental United States is rare enough, it seems to me, to merit special consideration. It is not surprising that the more remote parts of the west should yield new species of plants, but it must be conceded that nearly, if not quite, all the native genera are known. Thus when a year ago, Dr. E. H. Graham transmitted to me for identification, specimens of a strange cruciferous plant which he had collected in the Uinta Basin of eastern Utah, the possibility of their belonging to an undescribed genus seemed remote indeed. An exhaustive study at the time, showed that these plants possessed a broad relationship with certain species of "Great Basin" crucifers which have been variously considered to belong to *Thelypodium*, *Thelypodopsis* or *Sisymbrium*. Graham's specimens, though only in flower or in some cases possessing a few immature fruits, revealed distinctive characteristics which indicated that their disposition in any of the known genera was unsatisfactory and at best could be only temporary. Mature fruiting specimens were necessary for a complete analysis of this anomalous species, hence a trip into the Uinta Basin to make collections and detailed field observations was planned. On June 15,

1937, I visited the site of Graham's collecting and found the plants growing on a narrow (20 feet) highly calcareous stratum of shale of the Green River formation. The caespitose plants growing in clumps of from two to six inches across and deployed along this single stratum in a highly perplexing fashion, were traced along the face of a high bluff, known locally as Big Pack Mountain, for more than three miles.

This close adaptation to a specific stratum combined with the fact that the plant's discovery was so very recent, gives some indication that we are probably dealing with a highly localized endemic. Further substantiation of this view is evidenced by the more or less restricted ranges of the species found in association with it. These include: *Yucca Herrimaniae* Trel., *Linum leptopoda* A. Nels., *Mentzelia* sp., *Gilia polycladon* Torr., *Cryptantha nana* (Eastw.) Payson, *Cryptantha Grahamii* Johnston, *Cryptantha* sp., *Erigeron argentatus* Gray and *Hymenopappus lugens* Greene. Of these species, *Cryptantha Grahamii* is known only from the immediate vicinity, *Cryptantha* sp. and *Mentzelia* sp. are apparently new to science and the collection of *Linum leptopoda* appears to be the second for this rare species. The type collection of the latter was made in southern Nevada. The other species listed are typically "Great Basin" and are found most frequently in eastern Utah and adjacent Colorado. The deployed distribution and paucity of individuals of all species in the limited area under consideration, gives evidence of the extremely dry conditions under which they survive. The area is in the Upper Sonoran Life-Zone and would ordinarily be placed in the mixed desert shrub type, although the actual site more nearly approaches a "bad land" type of habitat.

Glaucocarpum gen. nov. Perenne suffruticosum glabrum et glaucum; caulibus gracilibus simplicibus; foliis alternis integris vel sparse dentatis; inflorescentiis racemosis; sepalis oblongis non saccatis; petalis flavis spathulatis integris; pedicellis erectis rigidis; siliquis sessilibus vel stipitatis glabris et glaucis; stylis robustis; stigmatibus integro; loculis 4-8-ovulatis; seminibus oblongis exalatis uniseriatis; cotyledonibus incumbenibus.

Glaucocarpum suffrutescens (Rollins) comb. nov. Species typica. *Thelypodium suffrutescens* Rollins ex Graham in Ann. Carneg. Mus. 26: 224. 1937. The known collections are from the Uinta Basin of eastern Utah and include the following: west of Willow Creek, Thorne's Ranch, eastern slope of Big Pack Mountain, Uintah County, May 23, 1935, *Graham 8950* (type in Gray Herb., isotypes in Carneg. Mus. Herb.); June 15, 1937, *Rollins 1700* (Gray Herb.).

The study of a large series of fruiting plants both in the field and as specimens, make advisable certain minor changes and additions to the original description of *G. suffrutescens*. Plants caespitose, 1-2.5 dm. high (average 2 dm.) root strong, deep and

with a pithy texture; radical leaves absent; leaves entire or sparsely and remotely dentate, petiolate or sessile by a narrow base, elliptical to broadly oblanceolate; paired stamens united at base or appearing as a single stamen as a result of the uniting of filaments and anthers by their entire length; siliques 1–2 cm. long, 2–3 mm. broad, slightly flattened parallel to the septum, sessile or with a short, stout gynophore less than 1 mm. long; valves strongly nerved from base to apex; style stout, 1–2 mm. long; stigma circular, entire and unexpanded; ovules 4–8 in each cell; seeds uniseriate, oblong, plump, 1.5–2 mm. long, 1–1.5 mm. broad, mucilaginous when wetted; funiculus free, stout, less than 1 mm. long; septum with a median band of cells slightly elongated parallel to replum; cotyledons incumbent.

Glaucocarpum is most closely related to certain species of *Thelypodium*, which in the broader sense includes species placed in *Thelypodiopsis* by Rydberg (Bull. Torr. Bot. Club 34: 432. 1907) and by O. E. Schulz (Engler, Pflanzenfam. 17b²: 582. 1936) and in *Sisymbrium* by Payson (Univ. Wyo. Publ. Sci. 1¹: 11–13. 1922). However, the natural relationship is not sufficiently close to allow the inclusion of the new plant in any of these genera. In order to avoid confusion in making a comparison, the broadly defined "Thelypodium" *sensu* Robinson (Syn. Fl. N. Am. 1¹: 173. 1895) and Jepson (Fl. Calif. 2: 35. 1936) is adopted for the present discussion, but it is not necessarily accepted as the most natural treatment. At the outset, *Glaucocarpum* and *Thelypodium* are dissimilar in field aspect. Except for being more caespitose and of lower stature, the new genus has a closer resemblance to *Stanleya* in habit and general appearance than to any species of *Thelypodium*. Distinctive features of *Glaucocarpum* are: the deep, strongly perennial, woody root; branching multicipital caudex; slender, wiry, simple and leafy stems; absence of radical leaves; numerous petiolate or narrowly sessile, entire cauline leaves; narrow, strict and elongated but lax inflorescence; greenish-yellow petals and young sepals; united long stamens; slightly developed nectar glands; strongly nerved, broad, rather short siliques and stout evident styles. Opposing characteristics typical of the genus *Thelypodium* include: a biennial or short-lived perennial habit; simple caudex; stout branching or more rarely simple stems; well-differentiated radical leaves; cauline leaves which are sessile and auriculate or if petiolate, then divided; broad and usually very congested inflorescence; purple to white or rarely yellowish flowers; long narrow often apiculate anthers with free filaments; well-developed nectar glands; long narrow and nerveless or nerved siliques with a short or obsolete style. In the aggregate, these characters effectively demonstrate the generic distinctiveness of *Glaucocarpum*.

Gray Herbarium, Harvard University,
February 18, 1938.

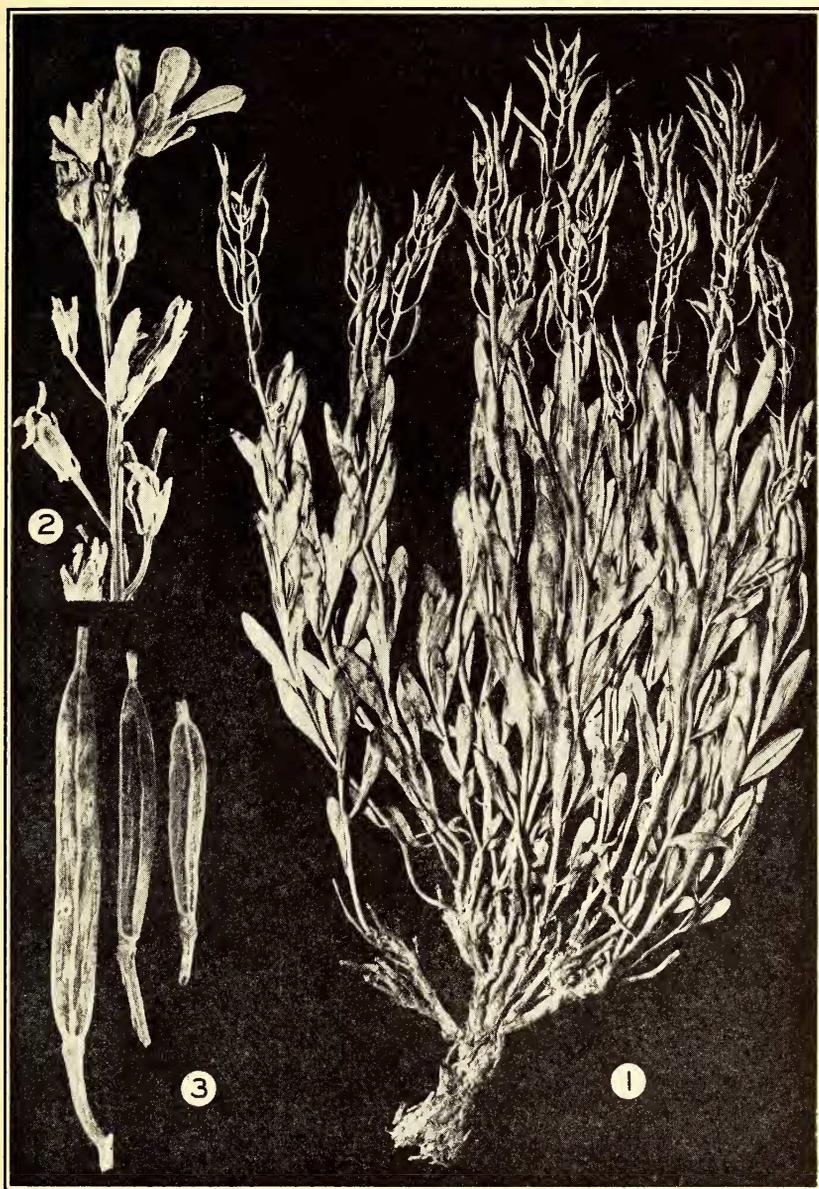


PLATE XXXIII. *GLAUCOCARPUM SUFFRUTESCENS* ROLLINS. Fig. 1. Fruiting plant $\times \frac{2}{3}$ (Rollins 1700). Fig. 2. Flowering raceme from the type $\times 2$ (Graham 8950). Fig. 3. Siliques $\times 3$ (Rollins 1700).